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MARTINE PENILLA & GENCARELLA, LLP
710 LAKEWAY DRIVE
SUITE 200
SUNNYVALE, CA 94085

EXAMINER	
CARTER, AARON W	

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2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/578,635	AISO, SEIJI	
	Examiner	Art Unit	
	AARON W. CARTER	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows (see also MPEP 2106):

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.
>
> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).
>
> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

2. Claims 1 and 16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 1 and 16 define an "apparatus". However, the bodies of the claims lack definite structure indicative of a physical apparatus. Furthermore, the specification indicates that the invention may be embodied as pure software,

see, for example, page 8, lines 9-20. Therefore, the claim as a whole appears to be nothing more than a system of software elements, and software per se does not fall within a statutory category.

Claims 2-13 are rejected by the virtue of their dependency upon claim 1.

3. Claim 14 is rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit[1], relying upon Supreme Court precedent[2], has indicated that a statutory "process" under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the "machine or transformation test", whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590"). While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform an article nor are positively tied to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim 15 is rejected by the virtue of its dependency upon claim 14.

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[1] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

[2] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 8-10, 12-14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 98/02844 to Peleg et al. ("Peleg").

As to claim 1, Peleg discloses an image processing apparatus that generates one still image having a high pixel density from multiple images (*page 5, lines 10-16 and page 35, lines 25-31, wherein the generated composite image corresponds to the one still image*), said image processing apparatus comprising:

an image extraction module that extracts the multiple images used for generation of the one still image (*page 5, line 30 - page 6, line 10*);

a deviation computation module that computes a degree of deviation between each combination of the extracted multiple images (*page 6, line 35 – page 7, line 3 and page 11, lines 1-10, wherein a degree of overlap corresponds to a degree of deviation*);

an image selection module that selects at least two images among the extracted multiple images, based on the computed degrees of deviation (*page 6, line 35 – page 7, line 3 and page 11, lines 1-10, wherein images are selected based on the degree of overlap*); and

an image composition module that combines the at least two selected images to generate the one still image (*page 7, line 32 – page 8, line 33 and page 9, lines 3-6, wherein the selected images are merged to generate the composite image corresponding to the one still image*).

As to claim 2, Peleg discloses an image processing apparatus in accordance with claim 1, wherein said image extraction module has a specification module that specifies a reference image as a base of composition of the one still image, and said image extraction module extracts the multiple images in a correlated order with the specified reference image (*page 5, line 30 - page 6, line 10*).

As to claim 3, Peleg discloses an image processing apparatus in accordance with claim 2, wherein the multiple images are consecutively arranged in time series, and the correlated order is a time series order from the specified reference image (*page 5, line 30 - page 6, line 10*).

As to claim 8, Peleg discloses an image processing apparatus in accordance with claim 1, wherein said image selection module has an exclusion module that excludes any image having the computed degree of deviation out of a preset threshold range from the extracted multiple images, and said image selection module selects images other than the image excluded by said exclusion module as the at least two images (*page 6, line 35 – page 7, line 3 and page 11, lines*

1-10, wherein images are selected based on the degree of overlap and if the amount of overlap is to large the image is excluded from being used in composite).

As to claim 9, Peleg discloses an image processing apparatus in accordance with claim 8, wherein the computed degree of deviation is at least either of a translational deviation between two images in a translational direction and a rotational deviation between the two images in a rotational direction, and said exclusion module excludes any image having at least either of the translational deviation and the rotational deviation out of the preset threshold range (*page 6, lines 11-22, page 6, line 35 – page 7, line 3 and page 11, lines 1-10, wherein images are selected based on the degree of overlap and if the amount of overlap is to large the image is excluded from being used in composite and the overlap is determined using translation and rotation of the image and therefore the degree of overlap would correspond to a translation deviation and rotation deviation*).

As to claim 10, Peleg discloses an image processing apparatus in accordance with claim 9, wherein the preset threshold range is expressed by a number of pixels set as a rate to a total number of pixels constituting the one still image (*page 6, lines 11-22, page 6, line 35 – page 7, line 3 and page 11, lines 1-10*).

As to claim 12, Peleg discloses an image processing apparatus in accordance with claim 1, wherein the multiple images are multiple frame images included in a moving image (*page 5, line 30 - page 6, line 10*).

As to claim 13, Peleg discloses an image processing apparatus in accordance with claim 8, wherein the multiple images are multiple still images having information of an exposure time, which varies according to lightness of a photographic subject at a shooting time, said image processing apparatus further comprising:

a threshold setting module that sets the threshold range for each still image, based on the varying exposure time (*page 10, lines 30-37*).

As to claim 14, please refer to the rejection of claim 1 above.

As to claim 16, please refer to the rejection of claim 1 above.

As to claim 17, please refer to the rejection of claim 1 above.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 4-7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peleg in view of US 2002/0051072 to Sumitomo et al. ("Sumitomo").

As to claim 4, Peleg discloses an image processing apparatus in accordance with claim 2.

Peleg does not disclose expressly an image composition number display module that displays number of images used for image composition, prior to generation of the one still image.

However, Sumitomo discloses an image processing apparatus that generates one still image having a high pixel density from multiple images (*abstract*), said image processing apparatus comprising an image composition number display module that displays number of images used for image composition, prior to generation of the one still image (*Figs. 4a-4c and supporting disclosure*).

Peleg & Sumitomo are combinable because they are from the same art of image processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the use of an image composition number display module as taught by Sumitomo with the image processing apparatus that generates one still image having a high pixel density from multiple images disclosed by Peleg.

The suggestion/motivation for doing so would have been to provide a user desired composite image (*Sumitomo, paragraph 9*).

Therefore, it would have been obvious to combine Peleg with Sumitomo to obtain the invention as specified in claim 4.

As to claim 5, the combination of Peleg and Sumitomo discloses an image processing apparatus in accordance with claim 1, said image processing apparatus further comprising:

an alarm module that gives an alarm when number of the at least two selected images does not reach a preset minimal number (*Fig. 6, element S17*).

As to claim 6, the combination of Peleg and Sumitomo discloses an image processing apparatus in accordance with claim 1, said image processing apparatus further comprising:

an execution selection module that selects either execution or non-execution of the image composition when number of the at least two selected images does not reach a preset minimal number (*Fig. 6, element S17*).

As to claim 7, the combination of Peleg and Sumitomo discloses an image processing apparatus in accordance with claim 1, said image processing apparatus further comprising:

a discontinuation module that discontinues the image composition when number of the at least two selected images does not reach a preset minimal number (*Fig. 6, element S17*).

As to claim 15, please refer to the rejection of claim 15 above.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7,327,494. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the present application is a broader version of claim 1 found in USPN 7,327,494 and all the limitations of claim 1 in the present application can be found in an obvious variation in claim 1 of USPN 7,327,494. See explanation of corresponding limitations below.

As to claim 1, USPN 7,327,494 discloses an image processing apparatus that generates one still image having a high pixel density from multiple images, said image processing apparatus comprising:

an image extraction module that extracts the multiple images used for generation of the one still image (*Claim 1, lines 2-6*);

a deviation computation module that computes a degree of deviation between each combination of the extracted multiple images (*Claim 1, lines 7-11*);

an image selection module that selects at least two images among the extracted multiple images, based on the computed degrees of deviation (*Claim 1, lines 12-17*); and

an image composition module that combines the at least two selected images to generate the one still image (*Claim 1, lines 18-22*).

10. Claims 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/541,479. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the present application is a broader version of claim 1 found in 10/541,479 and all the limitations of claim 1 in the present application can be found in an obvious variation in claim 1 of 10/541,479. See explanation of corresponding limitations below.

As to claim 1, 10/541,479 discloses an image processing apparatus that generates one still image having a high pixel density from multiple images, said image processing apparatus comprising:

an image extraction module that extracts the multiple images used for generation of the one still image (*Claim 1, lines 3-7*);

a deviation computation module that computes a degree of deviation between each combination of the extracted multiple images (*Claim 1, lines 13-15*);

an image selection module that selects at least two images among the extracted multiple images, based on the computed degrees of deviation (*Claim 1, lines 16-19*); and

an image composition module that combines the at least two selected images to generate the one still image (*Claim 1, lines 19-21*).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2001/0010546 to Chen discloses an apparatus for creating a composite image from multiple input images.

USPN 7,495,709 to Abe discloses an apparatus for creating a composite image from multiple input images.

US 2005/0013466 to Beun discloses an apparatus for creating a composite image from multiple input images.

USPN 7,376,249 to Beun discloses an apparatus for creating a composite image from multiple input images.

US 2005/0175235 to Luo et al. discloses an apparatus for creating a composite image from multiple input images.

US 2005/0063598 to Sen et al. discloses an apparatus for creating a composite image from multiple input images.

USPN 5,999,662 to Burt et al. discloses an apparatus for creating a composite image from multiple input images.

USPN 6,834,128 to Altunbasak et al. discloses an apparatus for creating a composite image from multiple input images.

USPN 7,460,730 to Pal et al. discloses an apparatus for creating a composite image from multiple input images.

US 2007/0133901 to Aiso discloses an apparatus for creating a composite image from multiple input images.

US 2004/0225221 to Olsson discloses an apparatus for creating a composite image from multiple input images.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON W. CARTER whose telephone number is (571)272-7445. The examiner can normally be reached on 9am - 5:30 am (Mon. - Fri.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron W Carter/
Primary Examiner, Art Unit 2624